

This listing of claims will replace all prior versions and listings of claims in the Application.

LISTING OF CLAIMS:

1. **(Twice Amended)** A Doherty amplifier system comprising:
 - an input splitter for splitting an input signal into first and second portions;
 - first and second signal paths for carrying respectively the first and second portions of the input signal;
 - one or more input phase shifters for realizing a net relative phase shift of approximately 90° between signals carried on the first and second signal paths;
 - a carrier amplifier having an output situated along a selected one of the first and second paths;
 - a peaking amplifier having an output situated along one of the first and second signal paths other than the selected one; and
 - a quarter wave transformer/combiner integrated circuit coupled directly to the outputs of the carrier and peaking amplifiers for realizing a net relative phase shift of approximately 90° between the amplifier outputs so the two are approximately in-phase, and combining the two to form one or more output signals.
2. **(Original)** The system of claim 1, wherein the carrier and peaking amplifiers comprise bipolar junction transistors.
3. **(Original)** The system of claim 1, wherein the carrier and peaking amplifiers comprise field effect transistors.
- 4-7. **(Previously Canceled)**
8. **(Once Amended)** The system of claim 1 further comprising a matching circuit coupled to the one or more outputs of the quarter wave transformer/combiner

integrated circuit for transforming the output impedance of the quarter wave transformer/combiner integrated circuit to a desired impedance.

9. **(Once Amended)** The system of claim 1 wherein the quarter wave transformer/combiner integrated circuit is configured to decrease the load impedance to the carrier amplifier as the input power increases.

10. **(Once Amended)** A Doherty amplifier system comprising:

means for splitting an input signal into first and second portions;

first and second signal path means for carrying respectively the first and second portions of the input signal;

phase shifting means for realizing a net relative phase shift of approximately 90° between signals carried on the first and second signal path means;

carrier amplifier means having an output for amplifying a signal carried by a selected one of the first and second path means;

peaking amplifier means having an output for amplifying a signal carried by one of the first and second path means other than the selected one; and

a quarter wave transformer/combiner integrated circuit [means] coupled directly to the outputs of the carrier and peaking amplifier means for realizing a net relative phase shift of approximately 90° between the amplifier means outputs so the two are approximately in-phase, and combining the two to form one or more output signals.

11-16. **(Previously Canceled)**

17. **(Cancel)**

18. **(Original)** The system of claim 1 implemented with solid state components.

19. **(Once Amended)** An RF integrated circuit comprising:

- an input splitter that splits an input signal into first and second portions;
- a first signal path for carrying the first portion of the split input signal;
- a second signal path for carrying the second portion of the split input signal;
- at least one input phase shifter that realizes a net relative phase shift of approximately 90° between the first and second portions of the split input signal;
- a carrier amplifier having an output within one of said first signal path and said second signal path;
- a peaking amplifier having an output within the other of said first signal path and said second signal path; and
- a quarter wave transformer/combiner integrated circuit connected to the outputs of said carrier amplifier and said peaking amplifier, wherein said circuit realizes a net relative phase shift of approximately 90° between the output of said carrier amplifier and the output of said peaking amplifier so that the outputs are approximately in phase, and wherein said circuit combines the output of said carrier amplifier and the output of said peaking amplifier to form at least one output signal.